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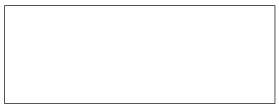

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CO-3 Morse Code Writer

and

CA-3 Tape Cartridge

A. Introduction

1. The CO-3 is used to write Morse code messages on the magnetic tape of the CA-3 cartridge. These messages are then transmitted at high speed when the CA-3 is placed in a keyer. The keyer may be a separate unit or it may be built into the transmitter.

2. There is nothing to wind, adjust or tune on either the CO-3 or CA-3. No battery or electric power is required. The tape is advanced by the writer or keyer and automatically rewound by the CA-3 when the cartridge is removed from either unit. Tape stops on the cartridge prevent overrunning the end of the tape.

3. To record a message, only four simple operations are required: place the CA-3 cartridge on the CO-3 writer, press the dot key for the Morse dot element; press the dash key for the Morse dash element; and press the space key for spacing between characters or between groups of characters.

4. Since the CO-3 works on the Morse code principle of DOT, DASH, and SPACE, the combining of these three elements to form code characters must be fully understood. A dot or a dash is an element; a character consists of one or more elements. For instance, the number "4" consists of the following four elements: DOT DOT DOT DOT DASH. The SPACE key is used only for spacing between characters and between groups of characters; it is never used for spacing between elements. The SPACE key is pressed once for spacing between characters and three times for spacing between groups. For instance, to write the group XYRLP DCUNB, space as follows: Y space; R space; L space; P space, space, space; D space; C space; U space; N space; B space, space, space; etc.

B. RECORDING A MESSAGE

1. Place a completely erased tape cartridge in place over the tape head of the CO-3 recorder. See Illustration 4. Press the cartridge firmly down over locking pins 6 (Illustration 3) making certain that the cartridge tape drive gear meshes properly with the writer drive gear. Place the CO-3 on a flat, smooth surface. Press and release the space key a few times to insure proper tape movement.

2. Press the DOT and DASH buttons in the proper Morse code sequence to form each character. Press the space button once for spacing between characters and three times for spacing between groups. Each key must be firmly and evenly pressed all the way down, then allowed to return of its own accord. Jerky motion, or too rapid operation will cause errors

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in the message. Even, deliberate, and rhythmic motion will produce accurate messages.

3. Never remove the CA-3 tape cartridge during the process of recording a message. If the cartridge is accidentally removed, the tape must be completely erased and the message recorded from the beginning.

C. REMOVAL OF CARTRIDGE FROM CO-3

Press the cartridge release button shown in Illustration 4 and remove the cartridge from the CO-3. Immediately upon releasing the cartridge, the tape will automatically rewind and the message will be ready for transmission. If the weather is extremely cold, insure that the cartridge has fully rewound by pushing on the puller tape spool.

D. PRECAUTIONS AND LIGHT MAINTENANCE

1. The CO-3

a. Inspect the magnetic tape head frequently for cleanliness. If dirt or gum is found, clean with a soft, lintless cloth.

b. Do not oil any part of the CO-3.

c. Do not remove the cover of the CO-3 or attempt to make any adjustments unless the writer fails completely.

2. The CA-3

a. If the cartridge contains lint, dust, or other foreign matter, clean it by blowing lightly or by brushing with a soft, clean, dry brush.

b. Do not oil any part of the CA-3.

c. To prevent tape damage, avoid touching the magnetic tape.

d. Under normal use, the magnetic tape should last indefinitely. If for any reason it is necessary to replace the tape, follow the procedure given below:

(1) Remove the three screws from the cartridge side cover nearest to the tape spools and remove the side cover. See Illustration 1.

(2) Refer to Illustration 2. Remove the end of the tape from the puller spool and pull the tape from the supply spool. When the end of the tape is reached, hold the supply spool and remove the tape.

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Do not allow the supply spool to run free, but brake it with one finger and permit it to rewind slowly.

(3) Remove any glue or adhesive tape remaining on the spools.

(4) Prepare 12½ feet (3.8 metres) of the highest available grade of magnetic tape. Preferably, clean unused tape should be used.

(5) Turn the supply spool clockwise until it stops and hold it against its stop. Using a small piece of adhesive tape, attach the end of the tape to the spool. The shiny side of the tape must be against the spool. After the tape is installed, the dull side must fit directly against the tape head of the writer or keyer.

(6) After attaching the tape to the supply spool and while still holding the spool against the stop, wind about 1½ turns of tape around the spool. Then allow the supply spool to self-wind the tape until it stops. Carefully control the rewind speed by braking the spool with the finger.

(7) With the supply spool fully rewound, cut off excessive tape by leaving about three inches (7.6 cm) extending from the bottom of the cartridge.

(8) Turn the puller spool counter-clockwise until it stops. Loosen the retaining screw and remove the puller spool, insuring that the spool shaft remains in the stop position.

(9) Thread the tape over the guide posts as shown in illustration 2. Attach the end of the tape to the puller spool with adhesive and wind the tape on the spool 1½ to 2 times. Replace the spool on its shaft, observing the key on the shaft and spool, and maintaining the puller shaft in the stop position by holding one finger against the tape drive gear. Lock the puller spool in place with the retaining screw.

(10) Check the operation of the cartridge by turning the drive gear until the tape is completely wound from the supply spool to the puller spool, then release the gear and check to determine that the tape rewinds smoothly.

(11) Replace the cartridge side cover and the three screws.

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Illustration 1 CA-3 Cartridge

1. Tape Drive Gear
2. Cartridge Release Button
3. Three Screws To Remove Side Cover
4. Side Cover

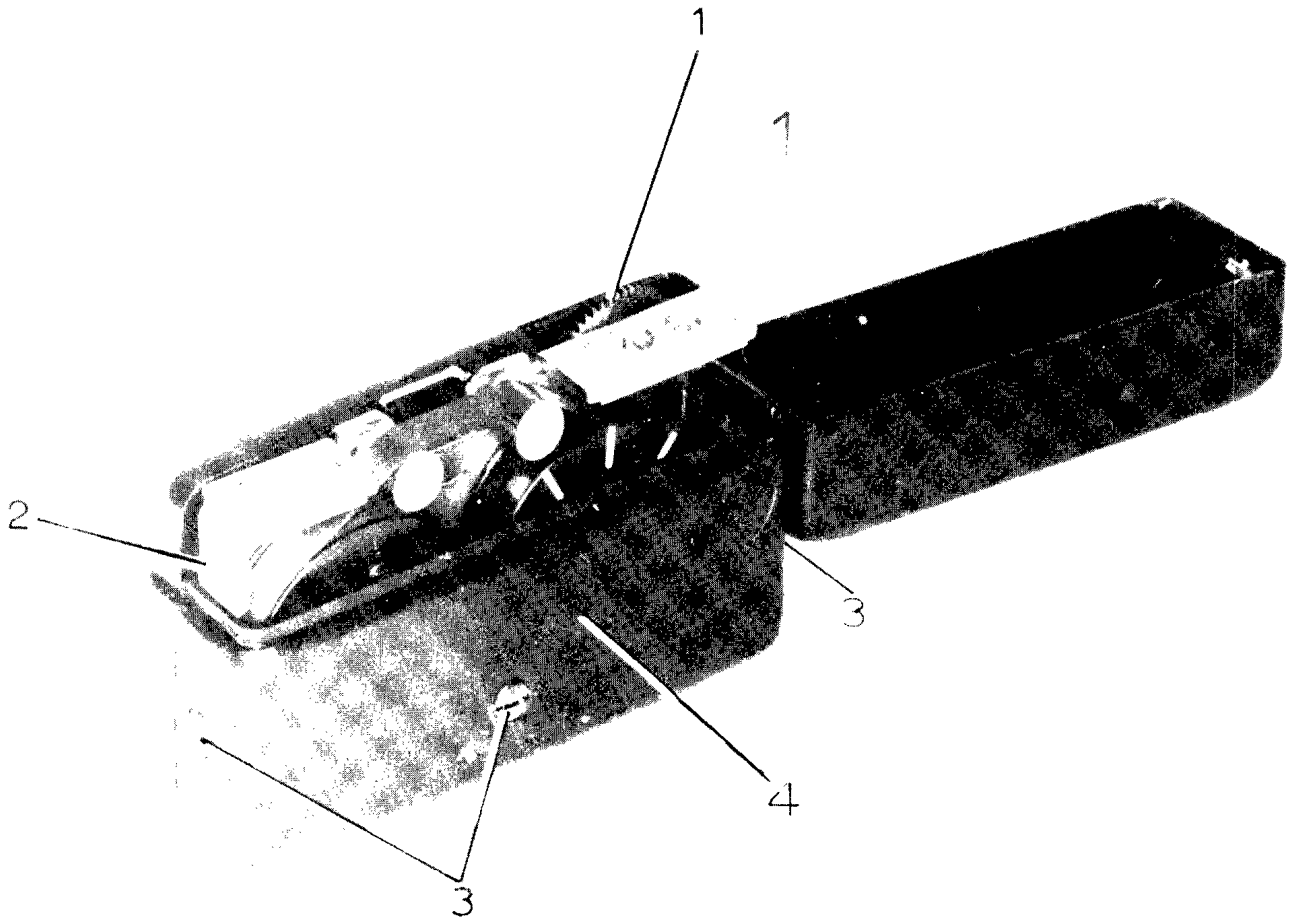

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Illustration 2 Drawing of Exposed CA-3

1. Magnetic Tape
2. Puller Tape Spool
3. Supply Tape Spool
4. Guideposts

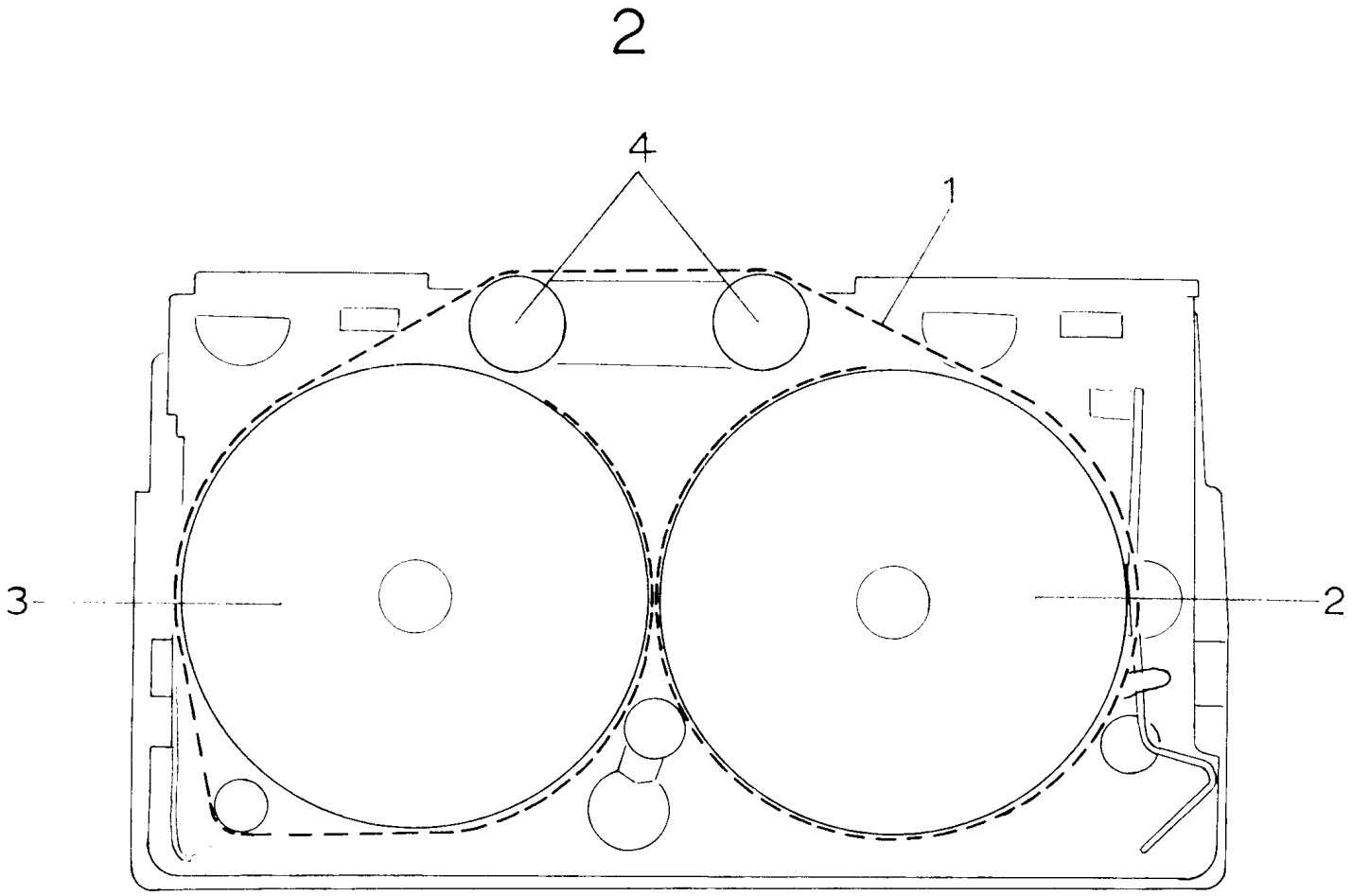

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Illustration 3 CO-3 Morse Code Writer

1. Morse DASH Key
2. SPACE Key
3. Morse DOT Key
4. Tape Drive Gear
5. Magnetic Tape Head
6. Cartridge Locking Pins

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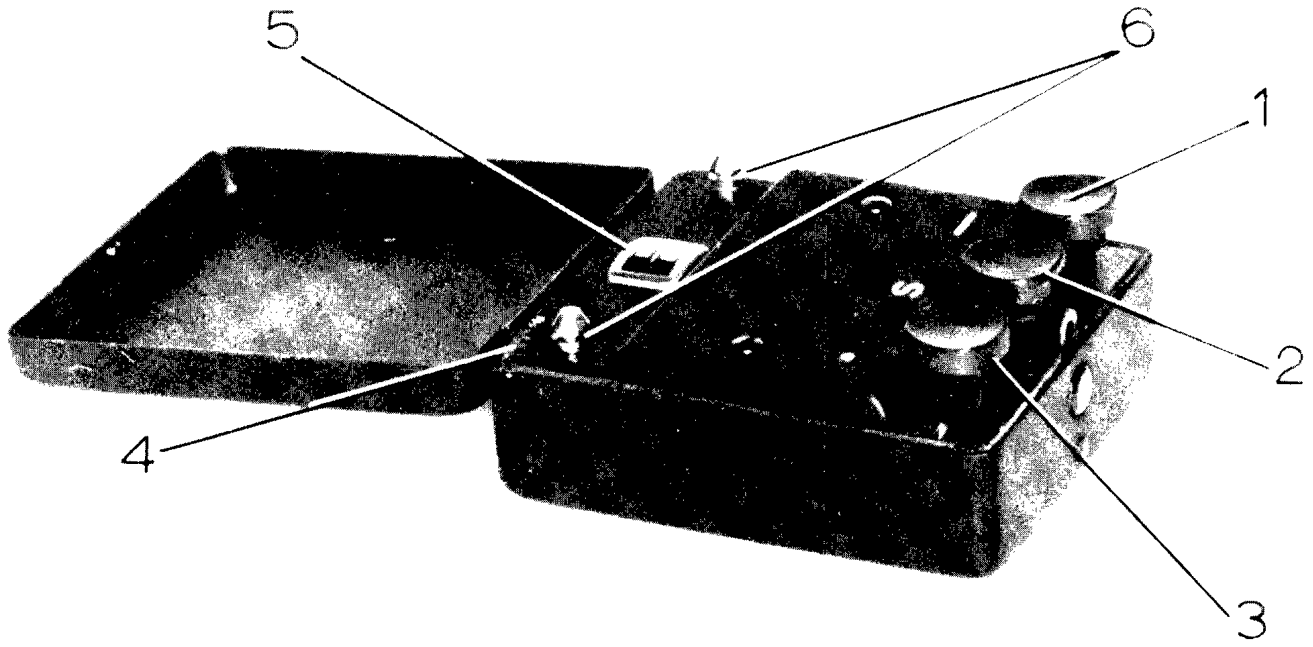

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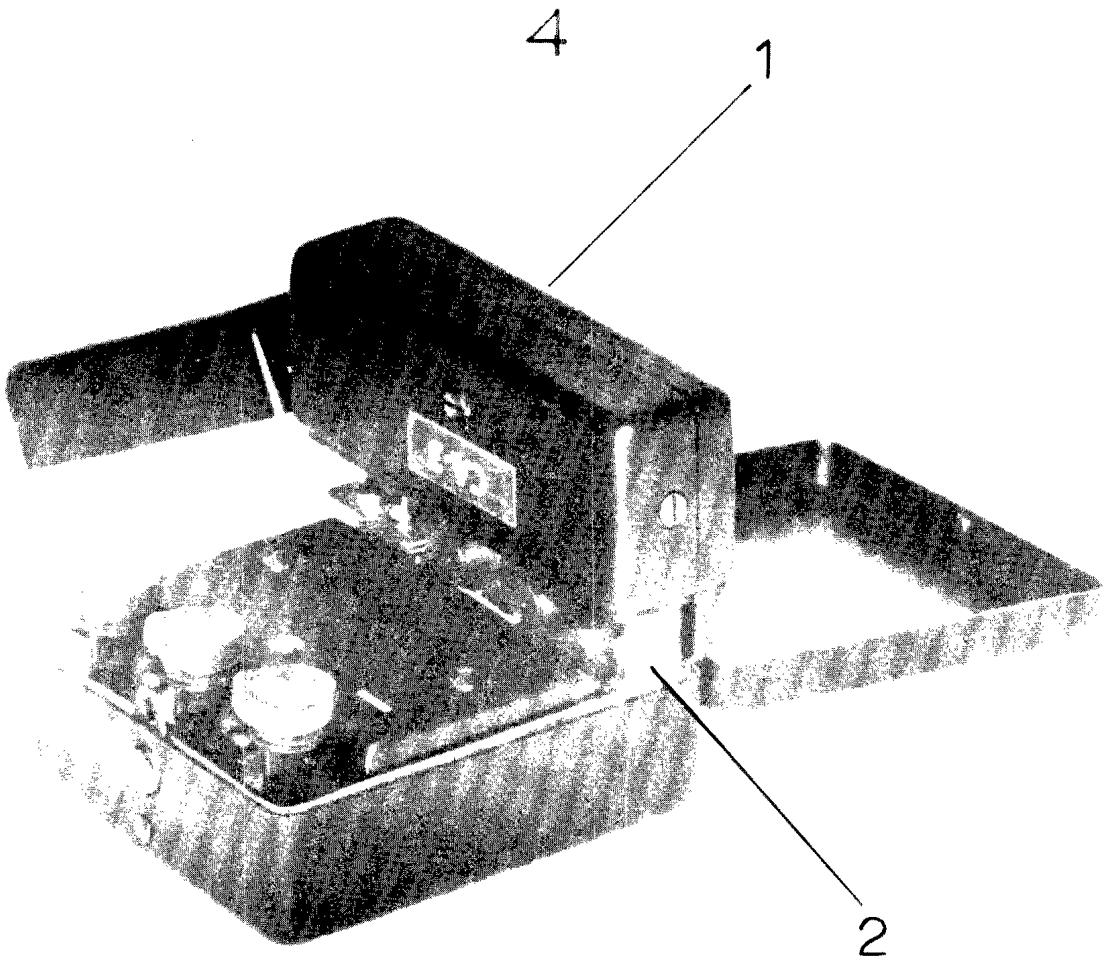
Illustration 4 CO-3 Morse Code Writer
with
CA-3 Cartridge Attached

1. CA-3 Cartridge
2. Cartridge Release Button



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